Notice of Allowability	Application No.	Applicant(s)	
	09/697,545	WANG, GUANGYI	
	Examiner	Art Unit	
	Jezia Riley	1637	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included h rewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *Amdt filed 9/14/03*.
2. ☒ The allowed claim(s) is/are *55-58,60-68 and 70-74*.
3. ☒ The drawings filed on 10/25/00 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☐ All b) ☐ Some* c) ☐ None of the:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
   (a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

8. ☐ CORRECTED DRAWINGS must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No. ____.
   (b) ☐ including changes required by the proposed drawing correction filed _____, which has been approved by the Examiner.
   (c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

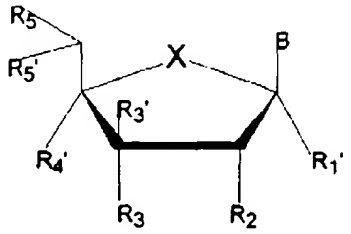
Attachment(s)

1☐ Notice of References Cited (PTO-892)
2☐ Notice of Informal Patent Application (PTO-152)
3☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
4☐ Interview Summary (PTO-413), Paper No.____ .
5☐ Information Disclosure Statements (PTO-1449), Paper No. ____.
6☐ Examiner's Amendment/Comment
7☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
8☐ Examiner's Statement of Reasons for Allowance
9☐ Other .

JEZIA RILEY
PRIMARY EXAMINER

ALLOWED CLAIMS/ TJ

55. (Currently amended) A compound having the structure:



wherein:

B is a nucleoside base;

any alkyl portion of R_1', R_3', R_4' and R_5' is C1 to C10, linear, branched, saturated or unsaturated;

~~any aryl portion of R_1', R_3', R_4' and R_5' is a phenyl, polycyclic ring or heterocycle;~~

R_2 is selected from the group consisting of H, OH, alkoxy, aralkoxy and aryloxy; and

and X is O;

(I) where R_3 and R_5 are independently selected from the group consisting of OH, OCEPA and a hydroxyl blocking group:

(A) where:

R_1' is selected from the group consisting of alkyl, substituted alkyl, aralkyl, substituted aralkyl, aryl, and substituted aryl, where the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of NO_2, N_3, CF_3, SH, SR, COOH, COOR, SO_3H, SO_3R, F, Cl, Br, and I, where R is ~~selected from~~ lower alkyl~~, aralkyl and aryl~~;

R_3', R_4' and R_5' are all H; and

with the proviso that where R2 is H and R3 is OH, then R_1' is not substituted alkyl;

(B) where:

R_3' is selected from the group consisting of substituted alkyl, aralkyl, substituted aralkyl, aryl, and substituted aryl, where the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of CN, N_3, CF_3, NH_2, NR_2, OR, SH, SR, COOH, COOR, SO_3R, F, Cl, Br, and I, where R is ~~selected from~~ lower alkyl, ~~aralkyl and aryl~~; and

R_1', R_4' and R_5' are H;

(II) where:

one of R_3 and R_5 is an internucleotide linkage and the other is selected from the group of OH, an internucleotide linkage and a hydroxyl blocking group;

~~R_1' is H; and~~

two of R_3', R_4' and R_5' are H and the other is modified as set forth below:

(A) R_4' is selected from the group consisting of substituted alkyl, substituted aralkyl, aryl, and substituted aryl, where R_4' does not comprise a label; and

the substituted portion of the substituted alkyl and substituted aralkyl is other than OH, CHO, SH, NH_2, COOH and $NHC(O)CF_3$;

(B) when R_5 is an internucleotide linkage;

R_5' is selected from the group consisting of substituted alkyl, aralkyl, substituted aralkyl, aryl, and substituted aryl; and

the substituted portion of the substituted alkyl is other than NH_2 and epoxyethyl; and

(C) R_3' is selected from the group consisting of substituted alkyl, aralkyl, substituted aralkyl, aryl, and substituted aryl; and
the substituted portion of the substituted alkyl is other than OH;

56. (Original) The compound of claim 55 which satisfies grouping I(A).

57. (Original) An oligonucleotide containing the nucleoside of claim 56.

58. (Original) The compound of claim 55 which satisfies grouping I(B).

60. (Original) The compound of claim 55 which satisfies grouping II(A).

61. (Original) An oligonucleotide containing the nucleoside of claim 60.

62. (Original) The compound of claim 60, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of NH_2, NHR', NR'R" and $^+$NR'R"R"' where R', R" and R"' are independently selected from the group consisting of lower alkyl and lower alkylcarbonyl.

63. (Original) The compound of claim 60, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of CN, NO_2, N_3, halogen, OR', SH and SR' where R' is selected from the group consisting of lower alkyl and lower alkylcarbonyl.

64. (Previously amended) The compound of claim 60, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of COOH, COOR' and CONR'R" where R' and R" are lower alkyl.

65. (Original) The compound of claim 60, wherein the substituted alkyl, substituted aralkyl and substituted aryl independently comprise a linker which is attached to at least one of a functional moiety, an artificial nuclease, a cross-linking reagent, an intercalator, and a reporter molecule.

66. (Original) The compound of claim 55 which satisfies grouping II(B).

67. (Original) The oligonucleotide of claim 66, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of NHR', NR'R" and $^{+}$NR'R"R'" where R', R" and R'" are independently selected from the group consisting of lower alkyl and lower alkylcarbonyl.

68. (Currently amended) The oligonucleotide of claim 66, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of CN, NO_2, N_3, halogen and SR' where R' is ~~selected from the group consisting~~ of lower alkyl ~~and lower alkylcarbonyl~~.

70. (Original) The compound of claim 55 which satisfies grouping II(C).

71. (Original) The oligonucleotide of claim 70, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of NHR', NR'R" and $^{+}$NR'R"R'" where R', R" and R'" are independently selected from the group consisting of lower alkyl and lower alkylcarbonyl.

72. (Previously amended) The oligonucleotide of claim 70, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of CN, NO_2, N_3, halogen, OH, OR', SH and SR', where R' is lower alkyl.

73. (Currently amended) The oligonucleotide of claim 70, wherein the substituted portion of at least one of the substituted alkyl, substituted aralkyl and substituted aryl is selected from the group consisting of COOH, COOR' and CONR'R", where R' and R" are ~~independently selected from the group consisting of~~ lower alkyl~~, aralkyl and aryl~~.

74. (Original) The oligonucleotide of claim 70, wherein the substituted alkyl, substituted aralkyl and substituted aryl independently comprise a linker which is attached to a least one of a functional moiety, an artificial nuclease, a cross-linking reagent, an intercalator, and a reporter molecule.